AMENDMENTS TO THE CLAIMS

This listing of the claims will replace all prior versions and listings of the claims in this application.

Listing of the Claims:

1. (Currently amended) A process for continuously preparing a compound ~~which bears~~ that contains at least two functional groups which are each independently selected from the group consisting of nitrile group, carboxylic acid group, carboxylic ester group and carboxamide group, the process comprising the steps of

a) adding two terminal olefins, ~~which bear the functional groups required to prepare the compound as per a1) comprising at least two~~ wherein each of the terminal olefins comprise at least one of the functional groups, ~~in the presence of a compound as per a3) which is suitable as a~~ to an addition catalyst ~~for this addition and~~ that is homogeneous with respect to the resulting reaction mixture, the reaction ~~to obtain a~~ mixture comprising

a1) ~~a~~ the compound ~~which is~~ that contains the at least two functional groups and is obtained by monoaddition of the two terminal olefins ~~mentioned and bears at least two functional groups which are each independently selected from the group consisting of nitrile group, carboxylic acid group, carboxylic ester group and carboxamide group~~,

a2) a compound ~~which~~ that is obtained by polyaddition of the two terminal olefins ~~mentioned~~ and

a3) the ~~compound which is suitable as a catalyst for this~~ addition catalyst, the addition catalyst ~~and is~~ homogeneous with respect to the reaction mixture,

b) distilling the reaction mixture obtained in step a) to obtain

b1) the compound ~~which is obtained~~ by monoaddition of the two terminal olefins ~~mentioned and bears at least two functional groups which are each independently selected from the group consisting of nitrile group, carboxylic acid group, carboxylic ester group and carboxamide group, as the top~~ as one product and

b2) a mixture comprising

b2a) ~~a~~ the compound ~~which~~ that is obtained by monoaddition of the two terminal olefins ~~mentioned and bears at least two functional groups which are each independently selected from the group consisting of nitrile group, carboxylic acid group, carboxylic ester group and carboxamide group~~,

b2b) ~~a~~ the compound ~~which~~ that is obtained by polyaddition of the two terminal olefins ~~mentioned~~ and

b2c) the ~~compound which is suitable as a catalyst for this~~ addition catalyst, the addition catalyst ~~and is~~ homogeneous with respect to the reaction mixture,

c) ~~separating~~ forming a permeate and a retentate by contacting the ~~entire~~ mixture obtained in step b2) or a portion thereof ~~by means of~~ to a semipermeable membrane ~~to obtain a permeate and a retentate, in such a way that the~~ such that a weight ratio of component b2b) to component b2c) in the mixture b2) ~~fed in step c)~~ is smaller than in the retentate,

d) recycling the permeate obtained in step c) ~~partly or fully into~~ or a portion thereof to step a) and

e) optionally recycling the portion of the mixture obtained in step b2) ~~which~~ that has not been in contact with the membrane ~~separated~~ in step c) ~~partly or fully into~~ to step a)~~,~~

~~wherein the terminal olefins used are two olefins which each independently have the formula $H_2C=CHR^1$ in which R^1 is a nitrile group, carboxylic acid group, carboxylic ester group or carboxamide group~~.

2. (Currently amended) The process according to claim 1, wherein the compound ~~as per a1)~~ obtained by monoaddition in the reaction mixture ~~obtained in~~ of step a) is hydrogenated between steps a) and b) ~~to obtain a saturated compound~~.

3. (Currently amended) The process according to claim 1 ~~or 2~~, wherein the addition ~~in step a) is carried out in the presence of a compound, as a catalyst, which is homogeneous with respect to the reaction mixture and~~ catalyst comprises rhodium, ruthenium, palladium or nickel.

4. (Currently amended) The process according to ~~either of claims 1 and 2~~ claim 1, wherein the addition ~~in step a) is carried out in the presence of a compound, as a catalyst, which is homogeneous with respect to the reaction mixture and~~ catalyst comprises rhodium.

5. (Currently amended) The process according to ~~any of claims 2 to 4~~ claim 2, wherein the hydrogenation ~~between steps a) and b) is carried out~~ is conducted in the presence of a ~~compound, as a~~ hydrogenation catalyst~~, which~~ that is homogeneous with respect to the reaction mixture and comprises rhodium, ruthenium, palladium or nickel.

6. (Currently amended) The process according to ~~any of claims 2 to 4~~ claim 2, wherein the hydrogenation ~~between steps a) and b) is carried out~~ is conducted in the presence of a ~~compound, as a~~ hydrogenation catalyst~~, which~~ that is homogeneous with respect to the reaction mixture and comprises rhodium.

7. (Currently amended) The process according to ~~any of claims 2 to 6~~ claim 2, wherein the ~~same compound is used as a catalyst in the~~ addition catalyst ~~in step a)~~ and the hydrogenation ~~between steps a) and b)~~ catalyst are the same compound.

8. (Currently amended) The process according to ~~any of claims 1 to 7~~ claim 2, wherein the addition ~~in step a)~~ catalyst or the hydrogenation catalyst ~~or both are carried out in the presence of a compound, as a catalyst, which is homogeneous with respect to the reaction mixture,~~ comprises rhodium and has the formula $[L^1RhL^2L^3R]^+X^-$ where

L^1 is an anionic pentahapto ligand;

L^2 is an uncharged 2-electron donor;

L^3 is an uncharged 2-electron donor;

R is selected from the group consisting of H, C_1-C_{10}-alkyl, C_6-C_{10}-aryl and C_7-C_{10}-aralkyl ligands; and

X^- is a noncoordinating anion; and where two or three of L^2, L^3 and R are optionally joined.

9. (Original) The process according to claim 8, wherein L^1 is pentamethylcyclopentadienyl.

10. (Currently amended) The process according to ~~either of claims 8 and 9~~ claim 8, wherein X^- is selected from the group consisting of BF_4^-, B(perfluorophenyl)$_4^-$, B(3,5-bis(trifluoromethyl)phenyl)$_4^-$, $Al(OR^F)_4^-$ where R^F is ~~identical or different~~ part-fluorinated or perfluorinated aliphatic or aromatic radicals.

11. (Currently amended) The process according to ~~any of claims 8 to 10~~ claim 8, wherein L^2 and L^3 are each independently selected from the group consisting of C_2H_4, $CH_2=CHCO_2Me$, $P(OMe)_3$ and $MeO_2C-(C_4H_6)-CO_2Me$.

12. (Currently amended) The process according to ~~any of claims 8 to 10~~ claim 8, wherein L^2 and L^3 together are selected from the group consisting of acrylonitrile and 5-cyanopentenoic ester.

13. (Currently amended) The process according to ~~any of claims 8 to 11~~ claim 8, wherein L^2 and R together are $-CH_2-CH_2CO_2Me$.

14. (Currently amended) The process according to ~~any of claims 8 to 11 or 13~~ claim 8, wherein L^2, L^3 and R together are $MeO_2C(CH_2)_2-(CH)-(CH_2)CO_2Me$.

15. (Currently amended) The process according to claim 8, wherein the addition ~~in step a)~~ catalyst or the hydrogenation catalyst ~~or both are carried out in the presence of a compound, as a catalyst, which is homogeneous with respect to the reaction mixture, contains~~ comprise rhodium and is selected from the group consisting of

$[Cp^*Rh(C_2H_4)_2H]^+ BF_4^-$,
$[Cp^*Rh(P(OMe)_3)(CH_2=CHCO_2Me)(Me)]^+ BF_4^-$,
$[Cp^*Rh(-CH_2-CH_2CO_2Me)(P(OMe)_3)]^+ BF_4^-$,
$[Cp^*Rh(MeO_2C(CH_2)_2-(CH-)-(CH_2)CO_2Me)]^+ BF_4^-$,
$[Cp^*Rh(C_2H_4)_2H]^+$ B(3,5-bis(trifluoromethyl)phenyl)$_4^-$,
$[Cp^*Rh(P(OMe)_3)(CH_2=CHCO_2Me)(Me)]^+$ B(3,5-bis(trifluoromethyl)phenyl)$_4^-$,
$[Cp^*Rh(-CH_2-CH_2CO_2Me)(P(OMe)_3)]^+$ B(3,5-bis(trifluoromethyl)phenyl)$_4^-$,
$[Cp^*Rh(MeO_2C(CH_2)_2-(CH-)-(CH_2)CO_2Me)]^+$ B(3,5-bis(trifluoromethyl)phenyl)$_4^-$,
$[Cp^*Rh(C_2H_4)_2H]^+$ B(perfluorophenyl)$_4^-$,
$[Cp^*Rh(P(OMe)_3)(CH_2=CHCO_2Me)(Me)]^+$ B(perfluorophenyl)$_4^-$,
$[Cp^*Rh(-CH_2-CH_2CO_2Me)(P(OMe)_3)]^+$ B(perfluorophenyl)$_4^-$,
$[Cp^*Rh(MeO_2C(CH_2)_2-(CH-)-(CH_2)CO_2Me)]^+$ B(perfluorophenyl)$_4^-$,
$[Cp^*Rh(C_2H_4)_2H]^+ Al(OR^F)_4^-$,
$[Cp^*Rh(P(OMe)_3)(CH_2=CHCO_2Me)(Me)]^+ Al(OR^F)_4^-$,

$[Cp^*Rh(-CH_2-CH_2CO_2Me)(P(OMe)_3)]^+ Al(OR^F)_4^-$ and
$[Cp^*Rh(MeO_2C(CH_2)_2-(CH-)-(CH_2)CO_2Me)]^+ Al(OR^F)_4^-$,

where R^F is ~~identical or different~~ part-fluorinated or perfluorinated aliphatic or aromatic radicals.

16. (Currently amended) The process according to ~~any of claims 1 to 15~~ claim 2, wherein the hydrogenation is carried out at a partial hydrogen pressure in the range from 10 to 20 000 kPa.

17. (Currently amended) The process according to ~~any of claims 1 to 16~~ claim 2, wherein the hydrogenation is conducted at an average mean residence time of the ~~monoolefinically unsaturated~~ compound ~~which bears~~ that contains the at least two functional groups ~~which are each independently selected from the group consisting of nitrile group, carboxylic acid group, carboxylic ester group and carboxamide group in the range~~ is from 0.1 to 100 hours.

18. (Currently amended) The process according to ~~any of claims 2 to 17~~ claim 4, wherein the mixture obtained in ~~the addition in~~ step a) is fed to a hydrogenation ~~according to any of claims 1 to 18~~ reaction vessel without removing the ~~rhodium-comprising compound used as a~~ addition catalyst.

19. (Currently amended) The process according to ~~any of claims 1 to 18~~ claim 1, wherein the distillation in step b) is ~~carried out~~ conducted at a temperature in the range from 50 to 200°C.

20. (Currently amended) The process according to ~~any of claims 1 to 19~~ claim 1, wherein the distillation in step b) is ~~carried out~~ conducted at an average mean residence time in the range from 1 to 45 minutes.

21. (Currently amended) The process according to ~~any of claims 1 to 20~~ claim 1, wherein the distillation in step b) is ~~carried out~~ conducted at a pressure in the range from 0.5 to 500 mbar.

22. (Currently amended) The process according to ~~any of claims 1 to 21~~ claim 1, wherein ~~a~~ the semipermeable membrane ~~which~~ comprises substantially one or more ~~organic or~~ inorganic materials.

23. (Currently amended) The process according to ~~any of claims 1 to 22~~ claim 22, wherein the mean average pore size of the membrane is ~~in the range~~ from 0.9 to 50 nm ~~in the case of inorganic membranes~~.

24. (Currently amended) The process according to ~~any of claims 1 to~~ 22 claim 31, wherein the membrane has a mean average separation limit of ~~the membrane is in the range~~ from 500 to 100 000 daltons ~~in the case of organic membranes~~.

25. (Currently amended) The process according to ~~any of claims 1 to 24~~ claim 1, wherein ~~the~~ a ratio of the pressure on the retentate side of the membrane to the pressure on the permeate side of the membrane is ~~in the range~~ from 2 to 100.

26. (Currently amended) The process according to ~~any of claims 1 to~~ claim 25, wherein a pressure ~~in the range~~ from 0.1 to 10 MPa is applied on the retentate side of the membrane.

27. (Currently amended) The process according to ~~any of claims 1 to 26~~ claim 25, wherein a pressure ~~in the range~~ from 1 to 1000 kPa is applied on the permeate side of the membrane.

28. (Currently amended) The process according to ~~any of claims 1 to 27~~ claim 1, wherein the forming of the permeate and the retentate at the membrane ~~separation is carried out~~ is conducted at a temperature ~~in the range~~ from 0 to 150°C.

29. (Currently amended) The process according to ~~any of claims 1 to 28~~ claim 1, wherein the ~~component~~ compound obtained as b1) in step b) is hydrogenated ~~to obtain a saturated compound~~.

30. (New) The process according to claim 7, wherein the catalyst comprises rhodium.

31. (New) The process according to claim 1, wherein the semipermeable membrane comprises substantially one or more organic materials.

32. (New) The process according to claim 26, wherein a pressure from 1 to 1000 kPa is applied on the permeate side of the membrane.

33. (New) A process for the monoaddition of two terminal olefins, each of said two terminal olefins comprising a functional group independently selected from the group consisting of nitrile, carboxylic acid, carboxylic ester and carboxamide, the process comprising the steps of:

a) adding the two terminal olefins to an addition catalyst that is homogeneous with respect to the resulting reaction mixture, the reaction mixture comprising;

a1) a compound obtained by the monoaddition of the two terminal olefins,

a2) a compound obtained by the polyaddition of the two terminal olefins and

a3) the addition catalyst;

b) distilling the reaction mixture obtained in step a) to obtain

b1) a top product consisting essentially of the monoaddition product, and

b2) a bottom product mixture comprising;

b2a) the monoaddition product,

b2b) the polyaddition product, and

b2c) the addition catalyst, the addition catalyst homogeneous with respect to the bottom product mixture;

c) forming a permeate and a retentate by contacting the bottom product mixture or a portion thereof with a semipermeable membrane to provide a weight ratio of the polyaddition product to the addition catalyst in the retentate that is greater than the same weight ratio in the bottom product mixture; and

d) recycling the permeate obtained in step c) or a portion thereof to step a).

34. (New) The process according to claim 33, further comprising

e) recycling a portion of the bottom product mixture that does not contact the membrane in step c) to step a).

35. (New) The process according to claim 33, wherein the compound obtained by monoaddition of the two terminal olefins is hydrogenated between step a) and step b) in the presence of a hydrogenation catalyst.

36. (New) The process according to claim 35, wherein the hydrogenation catalyst and the addition catalyst comprise rhodium, and are independently of the formula $[L^1RhL^2L^3R]^+X^-$ where

L^1 is an anionic pentahapto ligand;

L^2 is an uncharged 2-electron donor;

L^3 is an uncharged 2-electron donor;

R is selected from the group consisting of H, C_1-C_{10}-alkyl, C_6-C_{10}-aryl and C_7-C_{10}-aralkyl ligands; and

X^- is a noncoordinating anion; and where two or three of L^2, L^3 and R are optionally joined.